



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/595,227	06/16/2000	MINGMING FANG	99154X204201	2766

29050 7590 02/15/2002

PHYLLIS T. TURNER-BRIM, ESQ., LAW DEPARTMENT  
CABOT MICROELECTRONICS CORPORATION  
870 NORTH COMMONS DRIVE  
AURORA, IL 60504

EXAMINER

SHAKERI, HADI

ART UNIT	PAPER NUMBER
----------	--------------

3723

DATE MAILED: 02/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/595,227

Applicant(s)

FANG ET AL.

Examiner

Hadi Shakeri

Art Unit

3723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 June 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, "the surface of a memory..." line 1, lacks sufficient antecedent basis. "the surface" is not positively recited earlier in the claim. Applicant may wish to replace "the" with --a--.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

4. Claim 24 is rejected under 35 U.S.C. 102(e) as being anticipated by Huynh et al., US Patent No. 6,190,237.

Huynh et al. discloses all the limitations of claim 24, i.e., a slurry containing water, an oxidizing agent, abrasive material and higher than 0.04M, col. 2, lines 15-20, phosphate ion or phosphonate ion, col. 2, lines 60-67.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-14, 17-23 and 25-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huynh et al in view of James et al., US Patent No. 6,069,080.

Huynh et al. discloses all the limitations of claims 1-3, i.e., a slurry containing water, an oxidizing agent, abrasive material and higher than 0.04M, col. 2, lines 15-20, phosphate ion or phosphonate ion, col. 2, lines 60-67, except for specifically disclosing the use of the slurry for polishing a surface of a memory disk, and whether the abrasive is fixed on or in a polishing pad. James et al. teaches a fixed abrasive polishing system, planarizing substrates including memory disk and semiconductor device substrates, Huynh et al. also states that the invention can also be used for other surfaces, col. 1, lines 8-10. It is known in the art as indicated by James et al. to apply a CMP polishing system in applications for both a memory disk and a semiconductor device. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to apply the invention of Huynh et al. which utilizes slurries which are resistant to pH changes in polishing a memory disk as indicated by James et al.

Regarding claims 5 and 6, PA (Huynh et al. in view of James et al.) meets the limitations, i.e., Huynh et al., Figs. 1 and 2.

Regarding claims 7-10, PA meets the limitations, Huynh et al., col. 2, lines 39-46.

Art Unit: 3723

Regarding claims 11 and 27, PA meets the limitations, James et al., col. 2, line 67 and col. 3, lines 5-8.

Regarding claims 12-14, PA meets the limitations, Huynh et al., col. 3, line 62.

Regarding claims 17-21, PA meets the limitations, Huynh et al., col. 2, lines 60-67, and col. 3, lines 1-3.

Regarding claims 22, 23, PA meets the limitations, Huynh, col. 2, lines 15-22.

Regarding claims 25, 26, PA meets the limitations, James et al., col. 13, line 5.

Regarding claim 4, It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the invention of prior art for memory disk comprising nickel-phosphorus, dependent on work-piece parameters, which would involve only routine skill in the art.

Regarding claims 28-34, PA meets the limitations.

7. Claims 1-14, 17-23 and 25-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over James et al. in view of Huynh et al.

James et al. discloses all the limitations of claim 1, i.e., a polishing composition comprising an oxidizer and abrasive material and a pH modifier, col. 4, lines 41-44, except for disclosing 0.04 M or higher phosphate ion or phosphonate ion. Huynh et al. teaches a polishing slurry with a pH buffering component comprising phosphoric acid or salt. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the invention of James et al. with the pH buffer as taught

Art Unit: 3723

by Huynh et al. to obtain slurries which are resistant to pH changes, Huynh et al. col. 2, line 14.

Regarding claims 2, 3, 5 and 6, prior art (James et al. in view of Huynh et al.) PA meets the limitations, i.e., Huynh et al., Figs. 1 and 2.

Regarding claims 7-10, PA meets the limitations, Huynh et al., col. 2, lines 39-46.

Regarding claims 11 and 27, PA meets the limitations, James et al., col. 2, line 67 and col. 3, lines 5-8.

Regarding claims 12-14, PA meets the limitations, Huynh et al., col. 3, line 62.

Regarding claims 17-21, PA meets the limitations, Huynh et al., col. 2, lines 60-67, and col. 3, lines 1-3.

Regarding claims 22, 23, PA meets the limitations, Huynh, col. 2, lines 15-22.

Regarding claims 25, 26, PA meets the limitations, James et al., col. 13, line 5.

Regarding claim 4, It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the invention of prior art for memory disk comprising nickel-phosphorus, dependent on work-piece parameters, which would involve only routine skill in the art.

Regarding claims 28-34, PA meets the limitations.

8. Claims 15, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huynh et al. and James et al. as applied to claim 1 above, further in view of Ishitobi et al., US Patent No. 6,152,976.

PA discloses all the limitations of the above claims, except for weight percentage of the oxidizing agent (0.1 to 5 molar). Ishitobi et al. teaches an abrasive composition for

Art Unit: 3723

a memory hard disk with an optional oxidizing agents content of greater than 0.01 wt.%. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the composition of Huynh et al. with the weight percent of oxidizer as taught by Ishitobi et al. to enhance the abrading action, Ishitobi et al., col. 5, line 24.

### ***Conclusion***

#### ***Response to Arguments***

9. Applicant's arguments filed 01/14/02 have been fully considered but they are not persuasive. Regarding the combination of Ishitobi, it is noted that Ishitobi teaches the use of an optional oxidizer, which would enhance abrading action, as was indicated in the Office Action, therefore the argument regarding the different composition and reason to combine is not persuasive. With regards to the argument that Huynh et al. does not disclose the limitations of 0.04 M or higher concentration of phosphonate or phosphate ion, as was indicated by the Applicant Huynh et al. discloses a concentration of 0.0001-100 M, preferably 0.01-0.1 M of possible acids including phosphate, therefore the limitation is met, it is noted, however, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. The argument that Huynh et al. teaches away from the claimed subject matter and unexpected results are not persuasive as the limitations are disclosed and in light of reason indicated above, i.e., argument regarding the optimum range.

Art Unit: 3723

10. Applicant's arguments with respect to claims 1-14, 17-27 are have been considered but are moot in view of the new ground(s) of rejection.

11. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Hadi Shakeri at (703) 308-6279, FAX (703) 746-3279 for unofficial documents. The examiner can normally be reached on Monday-Thursday, 7:30 AM to 6:00 PM.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist at (703) 308-1148.

HS



February 11, 2002



Joseph J. Hail, III  
Supervisory Patent Examiner  
Technology Center 3700